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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/382,702

08/24/1999

PETER ANTHONY HOCHSTEIN

65.016-046

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02/28/2005

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EXAMINER

VU, BAO Q

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/382,702

Applicant(s)

HOCHSTEIN, PETER ANTHONY

Examiner

Bao Q. Vu

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,7-35,37,38 and 40-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 7-22 is/are allowed.
- 6) ☒ Claim(s) 3,23-35,37,38 and 40-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the Corrected Appeal Brief filed on May 7, 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Allowable Subject Matter

2. Claims 7-23 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art alone or in combination discloses, Per claims, 7, 17 and 23 a regulated switching power supply with power factor correction for use in a series-parallel array having a battery-backup device that is responsive to AC power failure and provides input for controlling a switchover circuit to connect the output of the battery back-up to the input of the rectifier. Dependent claims 8-11 and claims 18-23 dependent on claims 7 and 17, respectively, is therefore allowable. Per claim 12 and 13, the allowable subject matter is the inclusion of the limitation of a half-wave power detector

that is responsive to a dimming signal at the rectifier input. Per claim 14, the allowable subject matter is the inclusion of a dimming detector that is responsive to a dimming means and that is responsive to the control signal for decreasing a regulated DC voltage to dim the LED array. Dependent claim 15 dependent on claim 14 is therefore allowable.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USP 5,463,280) in view of Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller in view of Applicant Prior Art (APA).

6. Johnson discloses the claimed invention (see figure 8) an AC input (102), a rectifier (108), a switching power supply (106) for use with an LED diode array (110), except for the use of series-parallel LED array, a power factor correction circuit and a pulse width modulator for use with a power supply circuit.

The Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller discloses that it is known in the art to have a power factor correction circuit and a pulse width modulator for use with a power supply circuit.

APA discloses the use of series-parallel LED array. See figure 1.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the power supply assembly as taught by Johnson and use a power factor correction circuit and a pulse width modulator for use with a power supply circuit as taught by the Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller since the Power Supply Cookbook teaches that the power factor correction circuitry are intended to increase the conduction angle of the rectifiers and to make the AC input current waveform sinusoidal and in phase with the voltage waveform. This in effect causes all the power drawn from the power line is real power not reactive power, thereby power drawn from the power line is much lower than that is drawn by the capacitive input circuit conventionally used. (See 4th paragraph page 195 Power Supply Cookbook) Power Supply Cookbook also teaches a pulse width modulator for use with a power supply circuit to operate the power transistor in both saturated and cutoff states, which is a more efficient way of operation than that of the linear regulator since the power device loss is kept to a minimum. (See 4th paragraph page 25 Power Supply Cookbook)

It further would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the power supply assembly as taught by Johnson and use a power factor correction circuit and a pulse width modulator for use with a power supply circuit as taught by the Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller and use it with a series parallel LED array as taught by APA, in order to provide circuit reliability and redundancy in the case, one of the LED fails, the other LED's from the LED array would light/work in its place.

7. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USP 5,463,280) in view of Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller in view of Applicant Prior Art (APA).

Johnson discloses the claimed invention (see figure 8) an AC input (102), a rectifier (108), a switching power supply (106) for use with an LED diode array (110), except for the use of electromagnetic interference filter, the LED array with multiple current paths and for their use in traffic, pedestrian or rail crossing signal housing.

Applicant's Prior Art (APA) discloses that it is known in the art to make use of series-parallel LED array in a switching power supply having multiple current paths and for their use in traffic, pedestrian or rail crossing signal housing. See figure 1.

The Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller discloses that it is known in the art to use an electromagnetic interference filter for use with a switching power supply.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the power supply assembly as taught by Johnson and use an electromagnetic filter (EMI) with the switching power supply as taught by the Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller since the Power Supply Cookbook teaches that the electromagnetic filter (EMI) is used to filter out switching noise from the input current waveform.

It further would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the LED array as taught by Johnson, The Power Supply Cookbook and the Motorola data sheet and use the series- parallel LED

array string having different current paths, (clearly shown in applicant's prior art figure 1), and for their use in traffic, pedestrian or rail crossing signal housing, since APA teaches that use of these LED arrays provides to provide a reliability and redundancy in the case, one of the LED fails, the other LED's from the LED arrays would light/work in its place. Also to have the invention encased in a housing assembly so as to protect the circuitry from the outside elements, the weather.

8. Claims 28-35, 37, 38, 41-43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USP 5,463,280) in view of Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller in view of Applicant Prior Art (APA).

Johnson discloses the claimed invention (see figure 8) an AC input (102), a rectifier (108), a switching power supply (106) for use with an LED diode array (110), except for the use of electromagnetic interference filter and having a switch mode power supply coupled to the output of the rectifier for maintaining current and voltage waveforms in phase with respect to variation in the input line (power factor correction circuitry), the LED array with multiple current paths and for their use in traffic, pedestrian or rail crossing signal housing and the switch mode power supply with power factor correction circuitry being an integrated circuit.

Applicant's Prior Art (APA) discloses that it is known in the art to make use of series-parallel LED array in a switching power supply having multiple current paths and for their use in traffic, pedestrian or rail crossing signal housing. See figure 1.

The Power Supply Cookbook and the Motorola data sheet for the MC 34261

controller discloses that it is known in the art to use an electromagnetic interference filter for use with a switching power supply the use of electromagnetic interference filter and having a switch mode power supply coupled to the output of the rectifier for maintaining current and voltage waveforms in phase with respect to variation in the input line (power factor correction circuitry). The Power Supply Cookbook also teaches the use of switch mode power supply with power factor correction circuitry being an integrated circuit.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the power supply assembly as taught by Johnson and use an electromagnetic filter (EMI) with the switching power supply and having a switch mode power supply coupled to the output of the rectifier for maintaining current and voltage waveforms in phase with respect to variation in the input line (power factor correction circuitry) as taught by the Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller since the Power Supply Cookbook teaches that the electromagnetic filter (EMI) to filter out switching noise from the input current waveform. Also, Power Supply Cookbook further teaches that the power factor correction circuitry is intended to increase the conduction angle of the rectifiers and to make the AC input current waveform sinusoidal and in phase with the voltage waveform. This in effect causes all the power drawn from the power line is real power not reactive power, thereby power drawn from the power line is much lower than that is drawn by the capacitive input circuit conventionally used. (See 4th paragraph page 195 Power Supply

Cookbook) Per claims 37 and 38, it is conventionally shown that the manufacture of this type of circuitry is an IC (integrated circuit). (See page 203, 3rd paragraph Power Supply Cookbook).

It further would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the LED array as taught by Johnson, The Power Supply Cookbook and the Motorola data sheet and use the series- parallel LED array string having different current paths, (clearly shown in applicant's prior art figure 1), and for their use in traffic, pedestrian or rail crossing signal housing, since APA teaches that use of these LED arrays provides to provide a reliability and redundancy in the case, one of LED fails, the other LED from the LED array would light/work in its place. Also to have the invention encased in a housing assembly so as to protect the circuitry from the outside elements, the weather.

Per claims 41, 42, and 43 LED series-parallel arrays are shown in figure 1 and with ballast resistors R1-R5. APA teaches that ballast resistors primarily function to maintain a given current through the LED strings. See figure 1.

9. Claims 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USP 5,463,280) in view of Power Supply Cookbook and the Motorola data sheet for the MC 34261 controller in view of Applicant Prior Art (APA) and further in view of and in view of Hildebrand (USP 5,075,601).

Johnson in view of Power Supply Cookbook and Motorola data sheet and in view of Applicant's Prior Art (APA) discloses the claimed invention (see above paragraphs)

except for the use of a conflict monitor circuit used to help control leakage currents by providing high impedance if such conditions exists.

Hildebrand discloses that it is known in the art to provide the use of conflict monitor circuit used to help control leakage currents by providing high impedance if such conditions exists. The Hildebrand circuit (see figure 1A) uses a Zener diode (CR5) in combination with transistor (Q2) and that those components correspond to the Zener diode (D5) and the transistor (Q1) of the claimed clamp circuit's "voltage sensing means". Hildebrand circuit uses a transistor (Q3) in combination with resistor (R7) and that those components correspond to the transistor (Q2) and the resistor (R5) of the claimed conflict monitor circuit's "control load means". Then finally, the circuit when the traffic light is off, thereby preventing leakage current, and that it completely removes this resistor (R7) from the circuit when the light is on. This operation corresponds to that of the claimed conflict monitor circuit, which places the resistor (R5) of its "control load means" in the circuit when the light is off and then completely removes that resistor (R5) from the circuit when the light is on.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the device of Johnson in view of Power Supply Cookbook and Motorola data sheet and provide an conflict monitor circuit as taught by Hildebrand, in order to lessen the effects of current leakage inherent to LED circuitry and have a more dynamic response to this recurring problem.

10. Claim 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USP 5,463,280) in view of and in view of Hildebrand (USP 5,075,601).

Johnson discloses the claimed invention power supply assembly with an LED load except for the use of a conflict monitor circuit used to help control leakage currents by providing high impedance if such conditions exists.

Hildebrand discloses that it is known in the art to provide the use of conflict monitor circuit used to help control leakage currents by providing high impedance if such conditions exists. The Hildebrand circuit (see figure 1A) uses a Zener diode (CR5) in combination with transistor (Q2) and that those components correspond to the Zener diode (D5) and the transistor (Q1) of the claimed clamp circuit's "voltage sensing means". Hildebrand circuit uses a transistor (Q3) in combination with resistor (R7) and that those components correspond to the transistor (Q2) and the resistor (R5) of the claimed conflict monitor circuit's "control load means". Then finally, the circuit when the traffic light is off, thereby preventing leakage current, and that it completely removes this resistor (R7) from the circuit when the light is on. This operation corresponds to that of the claimed conflict monitor circuit, which places the resistor (R5) of its "control load means" in the circuit when the light is off and then completely removes that resistor (R5) from the circuit when the light is on.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the device of Johnson in view of Power Supply Cookbook and Motorola data sheet and provide a conflict monitor circuit as taught by Hildebrand, in order to lessen the effects of current leakage inherent to LED circuitry and have a more dynamic response to this recurring problem.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

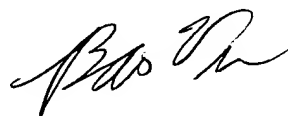
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Q. Vu whose telephone number is (571) 272-2088. The examiner can normally be reached on Monday-Fridays, 8:00AM- 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bao Q. Vu
Primary Examiner
Art Unit 2838

February 2, 2005



MICHAEL SHERRY
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